Strategic Diagnostics Inc.
Cumberland County
Windham, Maine
A-124-71-E-R

Departmental
Findings of Fact and Order
Air Emission License

After review of the air emission license renewal application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Strategic Diagnostics Inc. has applied to renew their Air Emission License, permitting the operation of a Class IV-A veterinary incinerator to dispose of animal remains. Strategic Diagnostics Inc. manufactures human and animal diagnostic products. The Windham site is a USDA registered animal facility which includes offices, labs, and animal barns. The license also includes three generators.

B. Emission Equipment

The following equipment is addressed in this license:

Incinerator

Incinerator Make and Model	Burn-Easy, Model 428
Class Incinerator	IV-A
No. of Chambers	2
Type of Waste	Type 4, animal carcass
Max. Design Combustion Rate	75 lb/hr
Max. Design Charge Rate (per load)	900 lb
Auxiliary Fuel Input: **Primary Chamber** **Secondary Chamber**	#2 fuel oil 315,000 Btu/hr 189,000 Btu/hr
Emission Control	Afterburner

The incinerator combustion gases vent to a 16.75 foot AGL (Above Ground Level) stack, with a diameter of 8 inches.

Generators

Equipment	Maximum Capacity (MMBtu/hr)	Max. Firing Rate (gal/hr)	Power Rating (kW)	Fuel Type
Generator #1	0.62	6.6	55	LPG
Generator #2	0.51	5.4	45	LPG
Generator #3	0.53	5.6	47	LPG

Strategic Diagnostics Inc. also operates HVAC units and residential sized furnaces, which are considered insignificant activities as defined in *Major and Minor Source Air Emission License Regulations*, 06-096 CMR 115 (last amended December 24, 2005), Appendix B.

C. Application Classification

Strategic Diagnostics Inc. license application is considered a renewal. The emission calculations for the incinerator have been updated. The application has been processed under 06-096 CMR 115.

II. BEST PRACTICAL TREATMENT

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulations*, 06-096 CMR 100 (last amended December 24, 2005).

BPT for existing equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Veterinary Incinerator

The Burn-Easy model 428 veterinary incinerator, Class IV-A, was manufactured in March 2004 and installed in April 2004. The unit fires #2 fuel oil.

BPT for the Class IV-A veterinary incinerator includes the following:

- Emission Limits
  Emissions information is based on a licensed allowed particulate matter emission limit of 0.12 gr/dscf corrected to 12% CO_2, the burning of #2 fuel as an auxiliary fuel, and the use of AP-42 factors: Tables 2.3-1 and 2.3-2 for biomedical waste incineration (dated 7/93) and Tables 1.3-1 and 1.3-3 for fuel burning (dated 9/98):
  PM - 0.12 gr/dscf corrected to 12% CO_2, based on BPT, and 0.151 lb/hr based on calculations from manufacturer's volume flow data
  SO_2 – 0.34 lb/hr based on the AP-42 factor of 2.17 lb/ton and fuel oil sulfur (no greater than 0.5% sulfur)
  NO_X – 0.21 lb/hr based on the AP-42 factors of 3.56 lb/ton and 20 lb/1000 gal fuel oil
  CO – 0.13 lb/hr based on the AP-42 factor of 2.95 lb/ton and 5 lb/1000 gal fuel oil
  VOC – 0.01 lb/hr based on the AP-42 factor of 0.299 lb/ton and 0.34 lb/1000 gal fuel oil
  Opacity: Visible emissions from the incinerator shall not exceed 10% opacity based on a six (6) minute block average basis.

- Operating parameters:
  - An operating temperature in the secondary chamber or refractory lined stack at, or above, 1600^{o}F with a stack gas retention time of at least 0.75 seconds at, or above, 1600^{o}F,
  - To ensure an efficient burn and to prevent odors and visible emissions, the secondary chamber shall be preheated, as specified by the manufacturer, until the pyrometer temperature measures a minimum of 1600^{o}F prior to commencing the burn cycle.
  - Once the burn cycle has commenced by introduction of primary chamber combustion, the incinerator shall be operated in an efficient manner and as specified by the manufacturer for the period of time between preheat and reaching the set operational temperature to be a minimum of 1600^{o}F in the secondary chamber.
  - The temperature in the secondary chamber or refractory lined stack shall be maintained at or above 1600^{o}F for the duration of the burn cycle.
  - A pyrometer and ¼ inch test port shall be installed and maintained at the location of the incinerator or refractory lined stack which provides sufficient volume to insure a flue gas retention time of not less than 0.75 seconds at a minimum of 1600^{o}F.
  - A log will be maintained recording a description of the waste, the weight of the waste charged, preheat time, charging time and the temperature of the secondary chamber every 60 minutes after start-up until, and

including, final shutdown time. For facilities operating a chart recorder, the start time, date, and weight charged may be logged on the chart.

- The ash will be disposed of in accordance with the requirements of the Bureau of Remediation and Waste Management.
- The incinerator operator(s) shall receive adequate training to operate the incinerator in accordance with the manufacturer's specifications and shall be familiar with the terms of the Air Emission License.

C. Generators

Strategic Diagnostics Inc. operates three propane fired back-up generators. Generator #1 is a 55 kW unit located behind the office and labs, generator #2 is a 45 kW unit positioned next to barn #6, and generator #3 is a 47 kW unit located next to the new barn across the street. The generators are not subject to federal New Source Performance Standards (NSPS).

BPT for each LPG generator unit is based on the following (note there are no LPG factors for engines – previous license and this license used natural gas factors):

PM/PM_{10} – 0.0384 lb/MMBtu based on AP-42, Table 3.2-1 (dated 8/2000)
SO_2 – 0.001 lb/MMBtu based on firing propane with very low sulfur content
NO_X – 3.17 lb/MMBtu, based on AP-42, Table 3.2-1 (dated 8/2000)
CO – 0.386 lb/MMBtu, based on AP-42, Table 3.2-1 (dated 8/2000)
VOC – 0.12 lb/MMBtu, based on AP-42, Table 3.2-1 (dated 8/2000)
Opacity – Visible emissions shall not exceed 10% opacity on a 6 minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period.

The back-up generators shall each be limited to 500 hours of operation a year, based on a calendar year. Strategic Diagnostics Inc. shall keep monthly records of the hours of operation for each unit. The back-up generators are to be operated only for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Back-up generators are not to be used for prime power when reliable offsite power is available.

D. Annual Emissions

Strategic Diagnostics Inc. shall be restricted to the following annual emissions, based on continuous operation of the incinerator and 500 hours per year operation of each licensed back-up generator, on a 12-month rolling total:

Total Licensed Annual Emission for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM_{10}	SO_2	NOx	CO	VOC
Incinerator	0.66	0.66	1.5	0.9	0.6	0.05
Generator 1	0.01	0.01	neg.	0.49	0.06	0.02
Generator 2	0.005	0.005	neg.	0.40	0.05	0.02
Generator 3	0.005	0.005	neg.	0.42	0.05	0.02
Total TPY	**0.7**	**0.7**	**1.5**	**2.2**	**0.7**	**0.1**

III. AIR QUALITY ANALYSIS

According to 06-096 CMR 115, the level of air quality analysis and monitoring are determined on a case-by-case basis. Based on analysis for similar sources, the size of the source, the allowable emissions, the location, and the stack height, ambient air quality standards, including increments, are not expected to be violated. Therefore, an ambient air impact analysis will not be required for this source at this time.

ORDER

Based on the above Findings and subject to conditions listed below the Department concludes that the emissions from this above source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-124-71-E-R, subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time which any emission units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions. [06-096 CMR 115]

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 MRSA §353. [06-096 CMR 115]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]

(7) The licensee shall maintain and operate all emission units and air pollution control systems required by the air emission license in a manner consistent with good air pollution control practices for minimizing emissions. [06-096 CMR 115]

(8) The licensee shall maintain sufficient records, to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned

changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for the renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]

(10) The licensee may not use as a defense is an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]

(11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:

A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
   1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
   2. pursuant to any other requirement of this license to perform stack testing.

B. install or make provisions to install test ports that meet the criteria of 40 CFR part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

C. submit a written report to the Department within thirty (30) days from the date of test completion.

[06-096 CMR 115]

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess and operating conditions indicate emissions in excess of the applicable standards, then:

A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and

B. The days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. The licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 CMR 115]

(13) Notwithstanding any other provision in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emissions and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions when such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitations. [06-096 CMR 115]

(15) Upon the written request of the Department, the licensee shall establish and maintain such records, make such reports, install, use, and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance data. [MEDEP Chapter 115]

SPECIFIC CONDITIONS

(16) **Incinerator**

A. The incinerator shall be used for the disposal of type 4 (veterinary) waste and shall not be used for the disposal of plastics (other than the bag containing the animal), cytotoxic (antineoplastic) drugs or any radioactive wastes and shall not be used to dispose of any medical waste classified as type 7 waste, as defined in 06-096 CMR 100. [06-096 CMR 115, BPT]

B. The incinerator shall not exceed the maximum design charging rate of 900 lbs. Auxiliary fuel input to the primary and secondary chamber shall be #2 fuel meeting the criteria in ASTM D396. Compliance shall be demonstrated through fuel receipts. [06-096 CMR 115, BPT]

C. A log shall be maintained recording a description of the waste, the weight of waste charged, preheating time, charging time, afterburner temperature directly after charging and every 60 minutes after startup until, and including, final shutdown time, and time of final shutdown. For facilities operating a chart recorder, the start time, date, and weight of waste charged may be logged on the chart. [06-096 CMR 115, BPT]

D. The secondary chamber shall be preheated as specified by the manufacturer to a minimum of 1600^0F prior to combusting any waste and shall be maintained at a minimum of 1600^0F during the duration of the burn. [06-096 CMR 115, BPT]

E. Once the burn cycle has commenced by introduction of primary chamber combustion, the incinerator shall be operated in an efficient manner and as specified by the manufacturer for the period of time between preheat and reaching the set operational temperature to be a minimum of 1600^0F in the secondary chamber. [06-096 CMR 115, BPT]

F. A pyrometer and ¼ inch test port shall be operated and maintained at that location of the incinerator or refractory lined stack which provides sufficient volume to insure a flue gas retention time of not less than 0.75 seconds at the minimum of 1600^0F. [06-096 CMR 115, BPT]

G. Strategic Diagnostics Inc. shall not exceed a particulate matter emission limit of 0.12 gr/dscf corrected to12% CO_2 from the auxiliary fuel. Therefore, based on the maximum design combustion rate and continuous operation of the Class IV-A incinerator, emissions shall be limited to the following [06-096 CMR 115, BPT]:

Pollutant	gr/dscf	lb/hr
PM	0.12	0.15
PM_{10}	-	0.15
SO_2	-	0.34
NO_x	-	0.21
CO	-	0.13
VOC	-	0.01

H. Visible emissions from the incinerator shall not exceed an opacity limit of 10% based on a six (6) minute block average basis. [06-096 CMR 115, BPT]

I. The incinerator combustion gases shall vent to a stack of at least 16.75 feet AGL. [06-096 CMR 115, BPT]

J. The ash will be disposed of in accordance with the requirements of the Bureau of Remediation and Waste Management. [06-096 CMR 115, BPT]

K. The incinerator operator(s) shall receive adequate training to operate the incinerator in accordance with the manufacturer's specifications, and shall be familiar with the terms of this Air Emission License as it pertains to the operation of the incinerator. [06-096 CMR 115, BPT]

L. Though it is not currently required, the installation and operation of continuous chart recording devices may become necessary to document compliance with the temperature requirements of this license. Should the Bureau of Air Quality determine that continuous recording devices are necessary, the licensee shall, within 120 days, demonstrate that continuous recorders have been installed and are operational. [06-096 CMR 115, BPT]

(17) **Back-up Generators**

A. The three licensed back-up generators (0.62 MMBtu/hr, 0.51 MMBtu/hr, and 0.53 MMBtu/hr) shall each be limited to 500 hours per year, based on a calendar year. Hour meters shall be maintained and operated on each of the back-up generators. Records shall be kept documenting the monthly number of hours each generator is operated. [06-096 CMR 115, BPT]

B. The back-up generators shall only be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. The back-up generators shall not be used for prime power when reliable offsite power is available. A log shall be maintained documenting the date, time, and reason for operation. [06-096 CMR 115, BPT]

C. The back-up generators shall fire LPG. [06-096 CMR 115, BPT]

D. The back-up generators shall not exceed the following emission limits [06-096 CMR 115, BPT]:

	PM (lb/hr)	**PM_{10} (lb/hr)**	**SO_2 (lb/hr)**	**NO_x (lb/hr)**	**CO (lb/hr)**	**VOC (lb/hr)**
Generator 1 (0.62 MMBtu/hr)	0.02	0.02	0.001	1.97	0.24	0.07
Generator 2 (0.51 MMBtu/hr)	0.02	0.02	0.001	1.62	0.20	0.06
Generator 3 (0.53 MMBtu/hr)	0.02	0.02	0.001	1.68	0.20	0.06

E. Visible emissions from each of the LPG back-up generators shall not exceed 10% opacity on a 6 minute block average, except for no more than two (2) six (6) minute block averages in a 3 hour period. [06-096 CMR 115, BPT]

F. Strategic Diagnostics Inc. shall submit an amendment prior to running any of the back-up generators as a Dispachable Load Generator. [06-096 CMR 115, BPT]

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF , 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
DAVID P. LITTELL, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: May 25, 2007
Date of application acceptance: June 26, 2007

Date filed with the Board of Environmental Protection: _____

This Order prepared by Kathleen E. Tarbuck, Bureau of Air Quality.